CLAIMS

WHAT IS CLAIMED IS:

1. A method for identifying inhibitors of an Obtusifoliol 14α-demethylase (OBT-DM) enzyme, comprising:
    a) incubating an OBT-DM polypeptide in the presence and absence of a test compound under conditions suitable for OBT-DM activity; and
    b) measuring the amplitude of the difference between the absorbance around 432 nm and the absorbance around 413 nm in the presence and in the absence of the test compound, wherein an increase in the amplitude in the presence of the test compound indicates that the compound is an OBT-DM inhibitor.

2. A method for identifying inhibitors of an OBT-DM enzyme, comprising:
    a) incubating an OBT-DM polypeptide in the presence of at least one test compound under conditions suitable for OBT-DM activity;
    b) incubating the OBT-DM polypeptide under the same conditions as part (a) either in the absence of the test compound(s) or in the presence one or more compounds known not to bind specifically to the OBT-DM; and
    c) measuring the amplitude of the difference between the absorbance around 432 nm and the absorbance around 413 nm for the incubations of parts (a) and (b), wherein a relative increase in the amplitude in the presence of the test compound(s), indicates that at least one of the test compounds is an OBT-DM inhibitor.

3. The method of claim 1, wherein the OBT-DM is a plant OBT-DM.

4. The method of claim 2, wherein the plant is a dicot.

5. The method of claim 2, wherein the plant is a monocot.

6. The method of claim 2, wherein the OBT-DM is an *Arabidopsis* OBT-DM.

7. The method of claim 2, wherein the OBT-DM is SEQ ID NO:12.

8. The method of claim 2, wherein the OBT-DM is an OBT-DM polypeptide consisting essentially of SEQ ID NO:1.

9. The method of claim 1, wherein the OBT-DM is a fungal OBT-DM.

10. The method of claim 1, wherein the OBT-DM is a human OBT-DM.

11. A method for the concurrent testing of a plurality of compounds for the ability to inhibit OBT-DM enzyme activity, comprising:
    a) incubating a plurality of test compounds in a multi-well format, individually or in mixtures, with an OBT-DM polypeptide under conditions suitable for the OBT-DM activity, wherein at least one of the wells is a negative control comprising either no test compound or one or more compounds known not to bind specifically to the OBT-DM;
    b) measuring for each of the wells, the amplitude of the difference between the absorbance around 432 nm and the absorbance around 413 nm; and
    c) comparing the amplitude of the difference in absorbance between the wells comprising the test compound(s) and the negative control(s), wherein an increase in the amplitude for the wells comprising the test compound(s), relative to the wells comprising the negative control(s), indicates that at least one of the test compounds comprised within is an OBT-DM inhibitor.

12. The method of claim 10, wherein the OBT-DM is a plant OBT-DM.

13. The method of claim 11, wherein the plant is a dicot.

14. The method of claim 11, wherein the plant is a monocot.

15. The method of claim 11, wherein the OBT-DM is an *Arabidopsis* OBT-DM.

16. The method of claim 11, wherein the OBT-DM is SEQ ID NO:12.

17. The method of claim 11, wherein the OBT-DM is an OBT-DM polypeptide consisting essentially of SEQ ID NO:1.

18. The method of claim 10, wherein the OBT-DM is a fungal OBT-DM.

19. The method of claim 10, wherein the OBT-DM is a human OBT-DM.

20. A method for the concurrent testing of a plurality of compounds for the ability to inhibit OBT-DM enzyme activity, comprising:

a) incubating a plurality of test compounds in a multi-well format, individually or in mixtures, with an OBT-DM polypeptide under conditions suitable for the OBT-DM activity, wherein at least one of the wells is a negative control comprising either no test compound or one or more compounds known not to bind specifically to the OBT-DM;

b) measuring with a spectrophotometer the absorbance at 413nm for each of the wells, the absorbance at 413nm being measured using 432nm as a reference wavelength on the spectrophotometer; and

c) comparing the absorbance at 413nm between the wells comprising the test compound(s) and the negative control(s), wherein a decrease in the absorbance at 413nm in the wells comprising the test compound(s), relative to the negative control(s), indicates that at least one of the test compounds comprised within is an OBT-DM inhibitor.

21. The method of claim 20, wherein the OBT-DM is a plant OBT-DM.

22. The method of claim 21, wherein the plant is a dicot.

23. The method of claim 21, wherein the plant is a monocot.

24. The method of claim 21, wherein the OBT-DM is an *Arabidopsis* OBT-DM.

25. The method of claim 21, wherein the OBT-DM is SEQ ID NO:12.

26. The method of claim 21, wherein the OBT-DM is an OBT-DM polypeptide consisting essentially of SEQ ID NO:1.

27. The method of claim 20, wherein the OBT-DM is a fungal OBT-DM.

28. The method of claim 20, wherein the OBT-DM is a human OBT-DM.